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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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PAULEY PETERSEN & ERICKSON
2800 WEST HIGGINS ROAD
SUITE 365
HOFFMAN ESTATES, IL 60169

EXAMINER	
MARINI, MATTHEW G	
ART UNIT	PAPER NUMBER
2854	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/567,471	SCHULTHEIS ET AL.	
	Examiner	Art Unit	
	MATTHEW G. MARINI	2854	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 June 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33 and 35-55* is/are pending in the application.

4a) Of the above claim(s) *23 and 49* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22, 24-33, 35-48, and 50-55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-7, 9-14, 29-33, 35-40, 47 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Averill et al. (5,865,114) in view of Thompson et al. (5,640,659).

With respect to claim 1, Averill et al. teaches in Fig. 1 a printing device the printing device comprising: a transport system, 10, for the said substrate, 130, having a receiving device, 128, which can be heated using ovens 40, 42, and 44, to which one or more heating elements, i.e. ovens 40, 42, and 44 for introducing heat energy into the substrate are assigned, wherein upstream of the first printing unit, 28, of the printing units, 28, 30, 32, 34, 36, and 38, arranged one behind the other in a transport direction of the receiving device, 128, the substrate, 130, can be received has a separate receiving device for each substrate and can be sequentially conducted to the printing units, 28, 30, 32, 34, 36, and 38.

However, Averill et al. remains silent regarding a cooling device is assigned to the transfer medium of said printing unit, which is capable of removing heat energy from the transfer medium.

Thompson et al. teaches in fig. 1 a cooling device, 36, assigned to the transfer medium of said printing unit, which is capable of removing heat energy from the transfer medium. It would have been obvious to one of ordinary skill in the art at the time of invention to modify Averill et al. to include the cooling device taught by Thompson et al. because Thompson et al. teaches in Col. 4 lines 1-11 the cooling means prevents overheating.

The examiner would like to also point out that the limitations recited in the preamble have been treated as functional language, for example the language directed towards, toner powder, and electro-photographic printing unit. These limitations are not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

With respect to claim 2, Averill et al. teaches in Fig. 1 a printing device wherein each said heating element, 40, 42, and 44 are arranged on a side of the substrate facing away, i.e. above the receiving device, 128, of the transport system.

With respect to claims 3 and 29, Averill et al. teaches in Fig. 1 a printing device wherein the substrate is fixed in place supported at least partially on the receiving device, 128, as seen in Fig. 4.

With respect to claims 4 and 30, Averill et al. teaches in Fig. 1 a printing device wherein receiving device, 128, has an approximately frame-shaped receiving structure, 122, Fig. 4 for supporting the respective substrate, 130. Insofar as how the term "frame" is structurally defined in the claim, the examiner has interpreted the word according to the Webster dictionary definition of: *something composed of parts fitted together and united.*

With respect to claims 5 and 31, Averill et al. teaches in Fig. 1 a printing device wherein a plurality of printing units are arranged one behind the other for imprinting each said substrate, 130, in a different color, Col. 13 lines 26-43.

With respect to claims 6, 7, 32 and 33, Averill et al. teaches in Fig. 1 a printing device wherein the transport system, 10, conducts a plurality of the substrates, i.e. CDs, arranged one behind the other, as seen in Fig.1, through the transfer zones of each of the printing units, 28, 30, 32, 34, 36 and 38, where in the transport system, 10, moves the substrate, 130, continuously.

With respect to claims 9 and 35, Averill et al. teaches in Fig. 1 a printing device wherein downstream of the last printing unit, 38, of the printing units arranged one behind the other in the transport direction of the receiving device, 128, the substrate can be removed from the respective receiving device, 128.

With respect to claims 10 and 36, Averill et al. teaches in Fig. 1 a printing device wherein following removal from the receiving device the substrate can be transferred to a sorting unit, 14.

With respect to claims 11, 12, 37 and 38, Averill et al. teaches in Fig. 1 a printing device wherein the transport system, 10, has a conveying device, i.e. conveying element, 16, which transports the receiving device, 128, along a guidance arrangement, 49.

With respect to claims 13 and 39, Averill et al. teaches in Fig. 1 a printing device wherein the guidance arrangement, 49, can be an arrangement of a guide rails.

With respect to claims 14 and 40, Averill et al. teaches in Fig. 1 a printing device wherein the guidance arrangement forms one of a closed track, and a conveying circuit for conveying the receiving device as seen in Fig. 1.

With respect to claims 47 and 48, Averill et al. teaches in Fig. 1 all that is claimed in above rejection of claim 1 including wherein the substrate, 130, is moved by the transport system, 10, beyond the transfer medium synchronously with a circumferential speed of the transfer medium, insofar as recited structure, except remains silent regard a printing device wherein the substrate rests on a conductive support of the receiving

device and the support is charged with a reversed polarity sign, i.e. opposite, compared with the charge of the toner.

Thompson et al. teaches in Fig.1 a printing device wherein the substrate, i.e. sheets, rests on a conductive support of the receiving device, 32, and the support is charged with a reversed polarity sign compared with the charge of the toner. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the receiving device of Averill et al. to contain the conductive surface and reversed polarity of the toner as taught in Thompson et al. because as taught in the abstract of Thompson et al. the opposite polarity prevents premature transfer of the image on the transfer roller.

Claims 15-22, and 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Averill et al. (5,865,114) in view of Thompson et al. (5,640,659), as applied to claims 1, 14, and 40, further in view of Yawata et al. (5,197,384).

With respect to claim 15-18, and 41-43, Averill et al. as modified by Thompson et al. fail to teach a cleaning device for the receiving device arranged at the conveying circuit, wherein the cleaning device is arranged following the last printing unit of the printing units arranged one behind the other in the conveying direction of the receiving device, and the receiving device can be introduced into the cleaning device following the removal of the substrate and upstream the first printing unit, where the substrate is received downstream the cleaning unit and upstream the first printing unit.

Yawata et al. teaches in Fig. 1 a cleaning device, 60, used for removing excess ink. It would have been obvious to one of ordinary skill in the art at the time of onvention to further modify Averill et al. to include the cleaning deceive of Yawata et al. to the printing unit downstream the last printing unit and upstream the first because the cleaning device will remove any excess ink thereby reducing the possibility of smudges from occurring on future received substrates.

With respect to claim 19, Averill et al. teaches in Fig. 1 a printing device wherein the transfer medium is a transfer roller, Col. 6 lines 61-64.

With respect to claim 20, Averill et al. as modified by Thompson et al and Yawata et al. teaches in Fig. 1 in Averill et al. a printing device wherein the transfer medium of the printing unit has a lower temperature in the transfer zone formed with the substrate at least in an area of the contact surface, than a surface of the substrate, insofar as recited structure is concerned.

With respect to claims 21 and 22, Averill et al. teaches in Fig. 1 the substrate, 130, is moved by the transport system, 10, beyond the transfer medium synchronously with a circumferential speed of the transfer medium, insofar as recited structure, except, Averill et al. remains silent regard a printing device wherein the substrate rests on a conductive support of the receiving device and the support is charged with a reversed polarity sign, i.e. opposite, compared with the charge of the toner.

Thompson et al. teaches in Fig.1 a printing device wherein the substrate, i.e. sheets, rests on a conductive support of the receiving device, 32, and the support is charged with a reversed polarity sign compared with the charge of the toner. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the receiving device of Averill et al. to contain the conductive surface and reversed polarity of the toner as taught in Thompson et al. because as taught in the abstract of Thompson et al. the opposite polarity prevents premature transfer of the image on the transfer roller.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Averill et al. (5,865,114) in view of Thompson et al. (5,640,659) and Yawata et al. (5,197,384), as applied to claim 22 above and further in view of Eisler (2,971,073).

With respect to claim 24, Averill et al., Thompson et al. as modified by Yawata et al. teach all that is claimed including a UV heating element, 40, 42, and 44, capable of having a wavelength of heat radiation matched exactly to an absorption maximum of at least one of the substrate, i.e. CD, and a plastic matrix of the toner insofar as recited structure but fails to teach said substrate being charged with heat energy by a metal foil heating device.

Eisler teaches in Fig. 1 a metal foil heating device. Because both Averill et al. and Eisler teach devices for heating a substrate, substituting one for the other would be

obvious to one of ordinary skill in the art at the time of invention because it would achieve the predictable result of heating a substrate to a desired temperature.

Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Averill et al. (5,865,114), Thompson et al. (5,640,659), Yawata et al. (5,197,384), and Eisler (2,971,073), as applied to claim 24 above, and further in view of Schulthels et al. (2007/0172268).

With respect to claims 25 and 26, Averill et al. as modified by Thompson et al. and Yawata et al. teach all that is claimed in the above rejection of claim 24, except wherein a temperature sensor, i.e. pyrometer, is assigned to the substrate, at least one of the heating element and the transport system can be controlled by a control device as a function of a signal emitted by the temperature sensor.

Schulthels et al. teaches in paragraph 39 a temperature sensor, i.e. pyrometer, 21, is assigned to the substrate, at least one of the heating element and the transport system *can be* controlled by a control device as a function of a signal emitted by the temperature sensor, paragraph 34, insofar as what is recited that can perform the recited function. It would have been obvious to one of ordinary skill in the art at the time of invention to further modify Averill et al. to include the temperature sensor of Schulthels et al. to the printer of Averill et al. because Schulthels et al. teaches in paragraph 39 such temperature sensors aid in the regulation of heat output and therefore enhancing the print quality of the device.

Claims 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Averill et al. (5,865,114), Thompson et al. (5,640,659), Yawata et al. (5,197,384), and Eisler (2,971,073) and Schulthels et al. (2007/0172268), as applied to claim 26 above, and further in view of Waterschoot (6,539,197).

With respect to claims 27 and 28, Averill et al., Thompson et al. as modified by ,Yawata et al., Eisler, and Schulthels teach all that is claimed in the above rejection of claim 26, including a conditioned air flow via element, 36 as taught in Thompson et al., is directed onto a surface of at least one of the transfer medium, however Averill et al., as modified byThompson et al.,Yawata et al., Eisler, and Schulthels fail to teach at least one liquid-cooled contact roller of the cooling device (28) roll off on the transfer medium.

Waterschoot teaches in Fig. 6 a roller, 215, that can a cooling liquid such as water directed through the roller, Col. 9 lines 17-30. It would have been obvious to one of ordinary skill in the art at the time of invention to further modify Averill et al. to include the water cooled roller, 215, of Waterschoot because in Col. 9 lines 17-30 the cooling effect assists in establishing the required temperature gradient at a transfer point, ensuring proper image transfer.

Claims 8, 44-46 and 55 rejected under 35 U.S.C. 103(a) as being unpatentable over Averill et al. (5,865,114) in view of Thompson et al. (5,640,659) as applied to claim 1 above, and further in view of further in view of Yawata et al. (5,197,384).

With respect to claim 44, Averill et al. teaches in Fig. 1 a printing device the printing device comprising: a transport system, 10, for the said substrate, 130, having a receiving device, 128, which can be heated using ovens 40, 42, and 44, to which one or more heating elements, i.e. ovens 40, 42, and 44 for introducing heat energy into the substrate are assigned, wherein upstream of the first printing unit, 28, of the printing units, 28, 30, 32, 34, 36, and 38, arranged one behind the other in a transport direction of the receiving device, 128, the substrate, 130, can be received has a separate receiving device for each substrate and can be sequentially conducted to the printing units, 28, 30, 32, 34, 36, and 38.

However, Averill et al. remains silent regarding a cooling device is assigned to the transfer medium of said printing unit, which is capable of removing heat energy from the transfer medium.

Thompson et al. teaches in fig. 1 a cooling device, 36, assigned to the transfer medium of said printing unit, which is capable of removing heat energy from the transfer medium. It would have been obvious to one of ordinary skill in the art at the time of invention to modify Averill et al. to include the cooling device taught by Thompson et al. because Thompson et al. teaches in Col. 4 lines 1-11 the cooling means prevents overheating.

Averill et al. as modified by Thompson et al. fail to teach a cleaning device for the receiving device arranged at the conveying circuit, wherein the cleaning device is arranged following the last printing unit of the printing units arranged one behind the other in the conveying direction of the receiving device, and the receiving device can be

introduced into the cleaning device following the removal of the substrate and upstream the first printing unit, where the substrate is received downstream the cleaning unit and upstream the first printing unit.

Yawata et al. teaches in Fig. 1 a cleaning device used for removing excess ink. It would have been obvious to one of ordinary skill in the art at the time of onvention to further modify Averill et al. to include the cleaning deceive of Yawata et al. to the printing unit downstream the last printing unit and upstream the first because the cleaning device will remove any excess ink thereby reducing the possibility of smudges from occurring on future received substrates.

The examiner would like to also point out that the limitations recited in the preamble have been treated as functional language, for example the language directed towards, toner powder, and electro-photographic printing unit. These limitations are not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

With respect to claim 45, Thompson et al. teaches in Fig. 1 a printing device wherein the transfer medium is a transfer roller, 32, containing at least a portion of the cooling device, 36, insofar as recited structure.

With respect to claim 46, Averill et al. teaches in Fig. 1 a printing device wherein the transfer medium of the printing unit has a lower temperature in the transfer zone formed with the substrate at least in an area of the contact surface, than a surface of the substrate, insofar as recited structure is concerned.

With respect to claim 8, Averill et al. teaches in Fig. 1 the printing device wherein upstream of the first printing unit, 28, of the printing units arranged one behind the other in the transport direction of the receiving device, 128, the substrate, 130, can be received in a separate receiving device, as seen in fig. 1, and can be sequentially conducted to the printing units.

With respect to claim 55, Averill et al. teaches in Fig. 1 a printing device wherein each said heating elements, i.e. ovens 40, 42, and 44 are arranged on a side of the substrate facing away, i.e. above the receiving device, 128, of the transport system.

Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Averill et al. (5,865,114) in view of Thompson et al. (5,640,659), as applied to claim 1, further in view of Eisler (2,971,073).

With respect to claim 50, Averill et al., as modified by Thompson et al. teach all that is claimed including a UV heating element capable of having a wavelength of heat radiation matched exactly to an absorption maximum of at least one of the substrate,

i.e. CD, and a plastic matrix of the toner insofar as recited structure but fails to teach said substrate being charged with heat energy by a metal foil heating device.

Eisler teaches in Fig. 1 a metal foil heating device. Because both Averill et al. and Eisler teach devices for heating a substrate, substituting one for the other would be obvious to one of ordinary skill in the art at the time of invention because it would achieve the predictable result of heating a substrate to a desired temperature.

Claims 51 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Averill et al. (5,865,114) in view of Thompson et al. (5,640,659), as applied to claim 1, further in view of Schulthels et al. (2007/0172268).

With respect to claims 51 and 52, Averill et al., as modified by Thompson et al. teach all that is claimed in the above rejection of claim 1, except wherein a temperature sensor, i.e. pyrometer, is assigned to the substrate at least one of the heating element and the transport system can be controlled by a control device as a function of a signal emitted by the temperature sensor.

Schulthels et al. teaches in paragraph 39 a temperature sensor, i.e. pyrometer, 21, is assigned to the substrate, at least one of the heating element and the transport system *can be* controlled by a control device as a function of a signal emitted by the temperature sensor, paragraph 34, insofar as what is recited that can perform the recited function. It would have been obvious to one of ordinary skill in the art at the time of invention to further modify Averill et al. to include the temperature sensor of

Schulthels et al. to the printer of Averill et al. because Schulthels et al. teaches in paragraph 39 such temperature sensors aid in the regulation of heat output and therefore enhancing the print quality of the device.

Claims 53 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Averill et al. (5,865,114) in view of Thompson et al. (5,640,659), as applied to claim 1, further in view of Waterschoot (6,539,197).

With respect to claims 53 and 54, Averill et al., as modified by Thompson et al. teach all that is claimed in the above rejection of claim 1, including a conditioned air flow via element, 36 as taught in Thompson et al., is directed onto a surface of at least one of the transfer medium, however Averill et al., Thompson et al., fail to teach at least one liquid-cooled contact roller of the cooling device (28) roll off on the transfer medium.

Waterschoot teaches in Fig. 6 a roller, 215, that can a cooling liquid such as water directed through the roller, Col. 9 lines 17-30. It would have been obvious to one of ordinary skill in the art at the time of invention to further modify Averill et al. to include the water cooled roller, 215, of Waterschoot because in Col. 9 lines 17-30 the cooling effect assists in establishing the required temperature gradient at a transfer point, ensuring proper image transfer.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW G. MARINI whose telephone number is (571)272-2676. The examiner can normally be reached on Monday-Friday 8:00 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571)-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Matthew Marini
11/4/09

/Judy Nguyen/
Supervisory Patent Examiner, Art Unit 2854